WTCI-474-P

Copy to ⇒ G.U. TAA. [illegible]

THE PORT AUTHORITY OF NEW YORK & NEW JERSEY

CONTRACTS & TENANT SERVICES

MEMORANDUM

cc: G. Gaeta, E. McNierney, E. Montalbano, J. Picone, S. Rosenberg, A. Stieglitz, R. Wegel, G. Clark

ONE WORLD TRADE CENTER
SUITE 36 SW

TO: W. Biancamano, R. Catlin, P. Ciano, E. Chalom, G. Doherty, E.K. Farrelly, W. Fife, P. Galya, R. Goode, G. Jensen, J. Kau, J. Miller, M. Ronis, S. Smolenski, E. Takla, V. Volpicelli

FROM: Ennala Ramabhushanam

DATE: August 27, 1991

SUBJECT: AMERICANS WITH DISABILITY ACT (ADA) OF 1990 - TENANT CONSTRUCTION

COPY TO: K.M. Collins, P. Cooper, V. Dovletian, E. Fasullo, TCRU Staff; File

The regulations of the Americans with Disability Act (ADA) have been made Federal Law, effective July 26, 1991. These regulations, along with the relevent local laws, i.e., ANSI A117.1-1986 in New York City and the Barrier Free subcode in New Jersey will be used in the reviews of tenant construction.

8/30

cc: L. Memo

J. Urinyi

P. Marchese

A. Simmons

Ennala Ramabhushanam

Ennala Ramabhushanam, P.E.
Manager
Quality Assurance Division

VAD/rr

RECEIVED

AUG 29 1991

PORT AUTHORITY OF N.Y. & N.J.
WORLD TRADE ECONOMIC DEV.

PORT AUTHORITY OF NY NJ
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LITIGATION MGMT.

THE PORT AUTHORITY OF NY & NJ

M E M O R A N D U M

TO: Hilliard Berry
FROM: Robert H. Lynch
DATE: September 14, 1987
SUBJECT: ELEVATOR HANDICAPPED MODIFICATIONS
COPY TO: M. Aasland, S. Burrick, T. Cancelliere, R. Linn, G. Maas, A. Stieglitz

I spoke with Mr. Donahue of the National Elevator Industry and he informed me that the international symbol of accessibility for the handicapped required by ANSI A117.1, is to be placed at a height of 60" on both door jams for each floor of the elevator services.

When Phase II of the elevator modification for the handicapped is completed, 500 signs will be necessary to meet the A117.1 requirements.

The Elevator Inspectors/Starters will start placing the signs in the appropriate places starting 9/21/87.

Robert H. Lynch
Senior Engineering Technician
World Trade & Economic Development

RHL:toy

BUCKSLIP

TO: Richard Kopps
FROM: Tom Cancelliere
DATE: April 22, 1987
SUBJECT: WTC: Handicapped Modifications to Certain Toilets
cc: J. Carlock, R. Hohenfeld, S. Knapp, R. Linn, G. Maas, L. Pisano, A. Preschle, A. Stieglitz, J. Verbist

Bob Linn requests that we alter the handicapped stall and water closet on the 31st floor ladies room and the 69th floor men's room, both in #1 WTC, to satisfy current A.N.S.I. standards.

This may require the adjusting of the top of seat to floor dimension as well as the position of the bars. The actual alteration should be planned to be performed within a brief period, say over a weekend or two consecutive evenings.

Please see Mr. Stieglitz and/or Ms. Pisano and review their copy of the current A.N.S.I. standard and prepare an alteration estimate for my review within the next month.

Thank you.

Tom Cancelliere

GIVE COPY OF ANSI CODE TO DICK KOPPS ON 4/28/87

WTCI-474-P 4

THE PORT AUTHORITY OF NY & NJ Memorandum

Refer To	Date	Noted By	Date
Return To		File	

One World Trade Center Accessibility Survey

To: Report Recipients

From: Roscoe W. Wisner

Date: January 14, 1983

Subject: ONE WORLD TRADE CENTER - FACILITY ACCESSIBILITY SURVEY REPORT

Reference: Memoranda-Montalbano to Linn dated May 1, 1982 and Linn to Montalbano dated October 1, 1982

Copy To: A. Coppolecchia, F. DiPaolo, D. Fasullo, R. Javurek, S. Johnson, R. Linn, D. Montalbano, R. Spaulding, A. Stieglitz, S. Wander

After reviewing the report of the One World Trade Center Accessibility Survey, Robert Linn, in the above referenced memorandum to Montalbano, listed a number of items which his staff felt were either errors or misinterpretations. In view of this, he recommended that the report be rescinded, corrected and then reissued.

In an effort to deal with Bob Linn's concerns and to clarify any misunderstandings that existed, a meeting was held in Bob Linn's office on October 21, 1982. In attendance were members of the survey team: A. Coppolecchia, R. Javurek and myself and members of the World Trade Department--R. Linn, F. DiPaolo, and A. Stieglitz. It was agreed that based on the discussions in the meeting, Attachment "A", the survey report would not be rescinded. The minutes in this attachment cover all of the considerations relating to the concerns voiced by the World Trade Department. Attachment "B" itemizes the corrections to the audit report.

It was recognized during the discussions that One WTC is generally accessible to disabled persons. This is laudable considering the fact that it was constructed a number of years before either the Architectural Barriers Act of 1968 or the Rehabilitation Act of 1973 were enacted. Recognition was also given to the fact that the survey was a large undertaking and was well done notwithstanding the few changes required.

Roscoe W. Wisner, Coordinator
Programs for the Handicapped

Attachments

PA 30A
7-80

A 7693

WTC Staff Comments on the Report	"Discussion of WTC Staff's Concerns"
1. "Paper holders too high in toilets" - ANSI specifies a minimum of 19", not maximum nor an exact height.	ANSI, 1980, does specify that the minimum height of paper holders should b 19" from the floor; however, in a "Corre tions" statement issued September 1981, ANSI specifies a maximum height for toil paper holders of 36" above the floor. Since the paper holders in question dispense at a height of 38" from the floor, they do not meet ANSI's 1980 Standards, except for those in the men and women's restrooms on the 106th floor It should be noted, however, that the 1961 ANSI Standards did not specifically address toilet paper dispensers but in Section 5.6.6 stated that "towel racks, towel dispensers, and other dispensers and disposal units should be mounted no higher than 40" from the floor. Although the paper holders surveyed do not meet the height requirement of the 1980 ANSI Standards, it appears as though they do meet the 1961 ANSI Standards which were in operation at the time the paper holders were installed.
2. "Mirror counters too high in Ladies Powder Rooms and lack depth" - The counters are 36" above the floor and are 12" wide. These are not work counters but are for resting handbags. ANSI allows for a counter height of 48" maximum if the horizontal dimension is less than 20". Elsewhere, ANSI provides for access to narrow storage shelves up to a maximum height of 54".	Whether the mirror counters in Ladies Powder Rooms are work surfaces is debatable. A number of those present felt that they are not work counters and others felt that they are. If they are work counters, they are too high and lack depth. If they are not wo counters, they are in compliance with the 1980 ANSI Standards. Section 5.6.4 of the 1961 ANSI Standards states that mirrors and shelves above lavatories should be as low as possible but no higher than 40" above the floor, measured from the top of the shelf and the bottom of the mirror. The '61 standards do not address the shelving depth. Since the shelves at issue are less than 40" from the floor and only 12" wide, it would seem that they are not in conflict with the 1980 ANSI Standards.
3. "Overheight Elevator Lanterns" - ANSI specifies 72" minimum, not a maximum nor an exact height requirement.	Since ANSI specifies a 72" minimum height for elevator lanterns, the elevator lanterns in One WTC are in compliance.

4. "Elevators lack presence detectors" - The elevator doors have detectors; however, they do not function according to latest ANSI requirements.	Although the passenger elevators surveyed do have presence detectors, they are of the Wheatstone Bridge type rather than photocell variety. Both systems, functioning properly, recall the door before it contacts a person's body. Although, the Wheatstone Bridge type of detector covers a range from 2 inches to 60 inches above the floor, it will not recall the door with the introduction of a cane or some other minimal mass.
5. "Shuttle Elevators require parallel control panels" - ANSI requires only <u>one</u> (1) panel on one (1) front wall for center opening doors; and <u>one</u> (1) panel on the side wall <u>or</u> front wall next to the door for side opening doors. One panel adjacent to each opening is sufficient.	Since the ANSI Standards do not require parallel control panels on shuttle elevators, the elevators surveyed are in compliance in this respect.
6. Exit stairs throughout the Tower Building - "Short Treads, no nose taper or tactile warnings, inside rail not continuous, outside rails without top and bottom extensions" - These items are required only for stairs connecting floors <u>not serviced by an elevator</u>.	It is questionable whether or not the ANSI Standards for exit stairs apply. One point of view is that since the passenger elevators are not completely accessible at this point in time and since they do not operate during a fire, the stairways do not meet 1980 ANSI Standards. The other point of view is that since an evacuation procedure for disabled persons has been established which will make it virtually unnecessary for them to use the exit stairs and since ANSI does not require accessible stairs for floors serviced by elevators, the exit stairs in One WTC are in compliance. It was generally agreed, however, that in new construction it is desirable that exit stairs meet ANSI Standards even though the floors may be serviced by elevators. This section will remain in the audit for informational purposes.
7. Towels exceed 54" in the 25th Floor Men's and Ladies' Toilets - These towels dispense at a point 39½" - 40" above the floor. However, the dispensing mechanisms at the WTC are generally 50" high.	The 1961 ANSI Standards required that towel dispensers be a maximum of 40" from the floor, while the 1980 ANSI Standards gives permissible maximum height of 54" from the floor on a parallel approach by a person in a wheelchair or 48" from a forward approach where no obstructions exist. The towel dispenser in the 25th floor restrooms comply with both the 1961 and 1980 Standards. The towel dispensers in the 55th and 85th floor restrooms also meet the 54" requirement for a parallel approach, but they do not

meet the 48" requirement for a forward approach. Since the towel dispenser is between two lavatories which may be occupied by two persons simultaneously, the possibility may arise whereby the only approach to the towel dispenser by a person in a wheelchair would be from a forward approach which would require the individual to wait to use the towel dispenser on a parallel approach. To assure ease of use of towel dispensers by a person in a wheelchair, it is desirable in all new construction, that towel dispensers dispense towels at a maximum height of no more than 48" from the floor.

8. Seat too high in the 25th Floor Men's Room Handicapped Stall - This particular water closet is exactly 19" to the top of the seat. However, most are 20" to comply with requirements of ANSI 1961, which was used as basis for WTC design.

The water closet in the 25th floor men's room stall for the disabled does meet 1980 ANSI Standards since the top of the sea is 19" from the floor. The water closet seats in the other restrooms surveyed meet the 1961 ANSI Standard of 20", but do not meet the 1980 ANSI Standard of 19" maximum height.

9. Bottom of mirrors exceed 40" maximum in the Men's Toilets - They are 12" above the floor, well within ANSI requirements.

Two points of view were expressed: (1) that the full-length mirror which exists in the restroom satisfies the 1980 ANSI requirement even though the mirrors above the lavatories exceed 40" from the floor; (2) that even though full-length mirrors accommodate all persons, they cannot replace the 1980 ANSI Standard requiring a 40" maximum to the bottom of mirrors above lavatories. Technically speaking, the latter point of view is probably the correct one. Even though a full-length mirror is provided, ANSI does not address this alternative. Although full-length mirrors are mentioned in the appendix, the appendix is not part of ANSI 1980. Therefore, technically, under the either it does or does not approach of the survey, mirrors in the restrooms do not meet ANSI Standards.

10. 55th Floor Men's Room - All the deficiencies listed do not apply, as this is a second Men's Room converted by the World Trade Institute from a former Women's Toilet. The other Men's Room toilet was constructed for handicapped accessibility and was not included in the survey.

The problem here is lack of signage. Since another men's room usable by disabled persons exists on the floor, a sign will be erected directing disabled men to that restroom.

11. "Unacceptable shape" of Elevator Call Buttons - ANSI requires that call buttons be at least 3/4" in their smallest dimension and does not limit their shapes. WTC call buttons are elongated triangles with two of the 3/4" minimum. If it is the pointed end that is deemed to be a deficiency, then a 3/4" diameter circle (acceptable by ANSI) would be unacceptable also.	It was agreed that elevator call buttons do not meet ANSI Standards.
12. Vesey Street Concourse Ramp at No. 5 WTC lacks level landings - the slight pitch of the landings that were provided is not deemed to be hazardous.	It was agreed that the Vesey Street ramp does not meet 1980 ANSI Standards.
13. "J" Elevators - Emergency control buttons noted as being 37" high - ANSI requires 35" minimum. With regard to engraved characters being 9/16" high in lieu of 5/8" requirement, this slight deviation of 1/16" should not be an obstacle to the handicapped.	It was agreed that the emergency control buttons on the "J" bank elevators do meet ANSI Standards, but the engraved characters do not.
14. "44th Floor Restrooms are not accessible" - These toilets belong to the Skydive Restaurant and are not public toilets. Also, ANSI does not require an accessible toilet on every floor but calls for "a reasonable number, but always at least one on an accessible route" in an accessible building.	Although the Skydive Restaurant is not a Port Authority-run operation, it would appear that the Port Authority does have some obligation to assure the accessibility of its facilities since they exist to service World Trade Center visitors. As this toilet is on an accessible route (to the 44th floor shops) and is used at some time by non-Skydive users; it cannot be considered solely for the use of Skydive patrons.
15. "Overheight" Elevator Call Buttons - The following requirement of ANSI 1980 is questioned: "Elevator call button fixtures shall be entered 42" above the floor" - ANSI recommends 48" as the highest forward approach to an object, with 54" as the highest parallel approach by a person in a wheelchair - the latter of which would apply to the WTC Elevator call button locations, which are mounted 48" high. Elsewhere, ANSI permits car operating panel buttons to be mounted up to 54" above the floor. The origin of the 42" height requirement should be investigated.	It was agreed that since the elevator call button fixtures are above the specific 42" maximum height permitted by 1980 ANSI, they do not conform.

ATTACHMENT "B"

ONE WORLD TRADE CENTER
FACILITY ACCESSIBILITY SURVEY

CORRECTIONS

- Toilet Paper - On 106th floor Audit No. 5, Sections 9.9 (d), (men) and (women), delete toilet paper height as being a deficiency.

- Mirror Counters - On Audits G, I and No. 1 (women) Section 9.4 (c), remove references to counter height as being a deficiency.

- Elevator Lanterns - On Audits D, G, H, I and Nos. 1, 2, 3, 4, 5, 6, 8 and 9- Delete references of Section 8 (2b), elevator lanterns, as being too high; and substitute "too small."

- Presence Detectors - On Audits D, G, H, I and Nos. 1, 2, 3, 8 and 9, Section 8 (5a) reword to read "Since the presence detectors were not functioning properly on the day of the survey, they did not meet ANSI requirements."

- Parallel Control Panels - On Audits G, H and I, delete Section 8.13 (a), lack of parallel Control Panels, as being a deficiency.

- Towel Dispenser - On Audits No. 1 and G, delete Section 9, 5 (c), towel dispenser height, as being a deficiency.

- Toilet Seat - On Audit No. 8, eliminate Section 9 (a), toilet seat height, as being a deficiency.

- "J" Elevators - On Audit D, delete Section 13 (g), emergency button height, as being a deficiency.

8.13 (a)

1/12/83

WTCT-474-P 5

THE PORT AUTHORITY OF NY & NJ Memorandum

To: Dominick Montalbano, Engineer of Design - WTC & Airports
From: Robert J. Linn
Date: October 1, 1982
Subject: THE WTC - FACILITY ACCESSIBILITY SURVEY - ONE WTC

Refer To	Date	Noted By	Date
Return To		File	

Reference: Memo - Montalbano/Linn, dated May 1, 1982

Copy To: Messrs. Coppolecchia, DiPaolo, Fasullo, Javurek, Johnson, Spaulding, Stieglitz, Wander, Wisner

My staff has reviewed the subject report and notes a large number of errors of facts and/or interpretation of the ANSI Standards. A spot check of the report shows the following examples of these errors.

1. "Paper holders too high in toilets" - ANSI specifies a minimum of 19", not maximum nor an exact height.

2. "Mirror counters too high in Ladies Powder Rooms and lack depth" - The counters are 36" above the floor and are 12" wide. These are not work counters but are for resting handbags. ANSI allows for a counter height of 48" maximum if the horizontal dimension is less than 20". Elsewhere ANSI provides for access to narrow storage shelves up to a maximum height of 54".

3. "Overheight Elevator Lanterns" - ANSI specifies 72" minimum, not a maximum nor an exact height requirement.

4. "Elevators lack presence detectors" - The elevator doors have detectors; however, they do not function according to latest ANSI requirements.

5. "Shuttle Elevators require parallel control panels" - ANSI requires only one (1) panel on one (1) front wall for center opening doors; and one (1) panel on the side wall or front wall next to the door for side opening doors. One panel adjacent to each opening is sufficient.

6. Exit stairs throughout the Tower Building - "Short Treads, no nose taper or tactile warnings, inside rail not continuous, outside rails without top and bottom extensions" - These items are required only for stairs connecting floors not serviced by an elevator.

7. Towels exceed 54" in the 25th Floor Men's and Ladies Toilets - These towels dispense at a point 39½" - 40" above the floor. However, the dispensing mechanisms at the WTC are generally 50" high.

8. Seat too high in the 25th Floor Men's Room Handicapped Stall - This particular water closet is exactly 19" to the top of the seat. However, most are 20" to comply with requirements of ANSI 1961, which was used as basis for WTC design.

9. Bottom of mirrors exceed 40" maximum in the Men's Toilets - They are 12" above the floor, well within ANSI requirements.

10. 55th Floor Men's Room - All the deficiencies listed do not apply, as this is a second Men's Room converted by the World Trade Institute from a former Women's Toilet. The other Men's Room toilet was constructed for handicapped accessibility and was not included in the survey.

11. "Unacceptable shape" of Elevator Call Buttons - ANSI requires that call buttons be at least 3/4 inch in their smallest dimension and does not limit their shapes. WTC call buttons are elongated triangles with two slightly curved legs. The short leg measures just a fraction less than 1/16" of the 3/4" minimum. If it is the pointed end that is deemed to be a deficiency, then a 3/4" diameter circle (acceptable by ANSI) would be unacceptable also.

12. Vesey Street Concourse Ramp at No. 5 WTC lacks level landings - The slight pitch of the landings that were provided is not deemed to be hazardous.

13. "J" Elevators - Emergency control buttons noted as being 37" high - ANSI requires 35" minimum. With regard to engraved characters being 9/16" high in lieu of 5/8" requirement, this slight deviation of 1/16" should not be an obstacle to the handicapped.

14. "44th Floor Restrooms are not accessible" - These toilets belong to the Skydive Restaurant and are not public toilets. Also, ANSI does not require an accessible toilet on every floor but calls for "a reasonable number, but always at least one on an accessible route" in an accessible building.

15. "Overheight" Elevator Call Buttons - The following requirement of ANSI 1980 is questioned: "Elevator hall button fixtures shall be centered 42" above the floor" - ANSI recommends 48" as the highest forward approach to an object, with 54" as the highest parallel approach by a person in a wheelchair - the latter of which would apply to the WTC Elevator call button locations, which are mounted 48" high. Elsewhere, ANSI permits car operating panel buttons to be mounted up to 54" above the floor. The origin of the 42" height requirement should be investigated.

From this sampling, it would appear that the errors are sufficiently widesprea and serious to justify rescinding the subject report, making corrections and re-issuing, all of which I recommend.

For your information, WTC is budgeted to expend approximately $100,000 per year of construction costs for handicapped facilities. The facilities under way for 1982 are as follows:

1) Curb Cuts - Phase I - Tower "A" Entrance at West Street; Entrances to Tower "B" and Southeast Plaza Building along Liberty Street; Entrances to The Plaza and Southeast Plaza Building along Church Street.

2) Initial Installation of Prototype Numerals at Selected Elevator Entrances

3) Modifications to Elevators K3, K4 & K5

4) Hotel Corridor-Handicapped Doors & Vestibule

The tentative program for 1983 is as follows:

1) Curb Cuts - Phase II - Northeast Plaza Building entrances on Church and Vesey Streets; locations along Vesey Street opposite West Broadway and Washington Street.

2) Elevator Entrance Numerals - Completion of Program

3) Lower Control Panels on Selected Elevators

4) Test Installations of Lever-operated and Push-type faucets at selected toilets

5) Signs for Handicapped Routes

6) Improve Phone Access - Concourse and 44A

Robert J. Linn
Deputy Director for
Physical Facilities
World Trade Department

AKS/FD:ar

WTC-474-P

6

THE PORT AUTHORITY OF NY & NJ Memorandum

To: Dominick Montalbano, Engineer of Design - WTC & Airports
From: Robert J. Linn
Date: September 16, 1982
Subject: THE WTC - FACILITY ACCESSIBILITY SURVEY - ONE WTC

Refer To	Date	Noted By	Date
Return To		File	

Reference: Memo - Montalbano/Linn, dated May 1, 1982

Copy To: Messrs. Coppolecchia, DiPaolo, Fasullo, Javurek, Johnson, Spaulding, Wander, Wisner, Stieglitz

My staff has reviewed the subject report and notes a large number of errors of facts and/or interpretation of the ANSI Standards. A spot check of the report shows the following examples of these errors.

1. "Paper holders too high in toilets" - ANSI specifies a minimum of 19", not maximum nor an exact height.

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3. "Overheight Elevator Lanterns" - ANSI specifies 72" minimum, not a maximum nor an exact height requirement.

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4. "Elevators lack presence detectors" - The elevators have detectors; however, they do not function according to latest ANSI requirements.

5. "Shuttle Elevators require parallel control panels" - ANSI requires one (1) panel on one (1) front wall for center opening doors; and one (1) panel on the side wall or front wall next to the door for side opening doors. We have a panel adjacent to each opening.

6. Exit stairs throughout the Tower Building - "Short Treads, no nose taper or tactile warnings, inside rail not continuous, outside rails without top and bottom extensions" - These items are required only for stairs connecting floors not serviced by an elevator.

7. Towels exceed 54" in the 25th Floor Men's and Ladies Toilets - These towels dispense at a point 39½" - 40" above the floor. However, the dispensing mechanisms at the WTC are generally 50" high.

8. Seat too high in the 25th Floor Men's Room handicapped stall - This water closet is exactly 19" to the top of the seat. However, most are 20" to comply with requirements of ANSI 1961, which was used as basis for WTC design.

9. Bottom of mirrors exceed 40" maximum in the typical Men's Toilets - They are 12" above the floor, well within ANSI requirements.

10. 55th Floor Men's Room - All the deficiencies listed do not apply, as this is a second Men's Room converted by the W.T. Institute from a former Women's Toilet. The other Men's Room toilet has handicapped accessibility and was not included in the survey.

11. "Unacceptable shape" of elevator call buttons - ANSI requires that call buttons be at least 3/4 inch in their smallest dimension and does not limit their shapes. WTC call buttons are elongated triangles with two slightly curved legs. The short leg measures just a fraction less than 1/16" of the 3/4" minimum. If it is the pointed end that is deemed to be a deficiency, then a 3/4" diameter circle (acceptable by ANSI) would be unacceptable also.

12. Vesey Street Concourse Ramp at No. 5 WTC lacks level landings - The slight pitch of the landings that were provided is not deemed to be hazardous.

13. "J" Elevators - Emergency control buttons noted as being 37" high - ANSI requires 35" minimum. With regard to engraved characters being 9/16" high in lieu of 5/8" requirement, this slight deviation of 1/16" should not be an obstacle to the handicapped.

14. 44th Floor Skylobby Restrooms are not accessible - ANSI does not require an accessible toilet on every floor but calls for "a reasonable number, but always at least one on an accessible route" in an accessible building.

15. The following requirement of ANSI 1980 is questioned: "Elevator hall button fixtures shall be centered 42" above the floor" - ANSI recommends 48" as the highest forward approach to an object, with 54" as the highest parallel approach by a person in a wheelchair - the latter of which would apply to the WTC elevator call button locations, which are mounted 48" high. Elsewhere, ANSI permits car operating panel buttons to be mounted up to 54" above the floor. The origin of the 42" height requirement should be investigated.

From this sampling, it would appear that the errors are sufficiently widespread and serious to justify rescinding the subject report, making corrections and re-issuing, all of which I recommend.

For your information, WTC is budgeted to expend approximately $100,000 per year of construction costs for handicapped facilities. The facilities under way for 1982 are as follows:

1) Curb-cuts/Phase I
2) Elevator Entrance Numerals
3) Lower Control Panels on Elevators K3, K4 & K5
4) Hotel Corridor-Handicapped Doors & Vestibule

The tentative program for 1983 is as follows:

1. Curb-cuts/Phase II
2. Elevator Entrance Numerals/Phase II
3. Lower Control Panels on Selected Elevators
4. Eliminate Wheel-Chair Barrier on West St. Doors
5. Install Lever-Handle Faucets - One per Toilet
6. Signs for Handicapped Routes
7. Improve Phone Access - Concourse and 44A

[illegible] Problem

Robert J. Linn
Deputy Director for
Physical Facilities
World Trade Department

AKS/FD:ar

WTCI-474-P

THE PORT AUTHORITY OF NY & NJ Memorandum 7

To: Mr. F. DiPaolo, Manager, WTC Planning Division
From: Aaron K. Stieglitz
Date: July 23, 1982
Subject: THE WORLD TRADE CENTER - Handicapped Accessibility

Refer To	Date	Noted By	Date
Return To		File	

Reference: Buckslip - A. Stieglitz/F. DiPaolo, dated July 20, 1982

Copy To: Messrs. D. Censullo, A. Coppolechia, P. Goz, S. Johnson, R. Linn, J. Ritter, C. Spaulding

The above referenced buckslip lists four (4) items of handicapped accessibility requirements of ANSI-117.1-80 not provided under Contract WTC 499.05. Item #1 noted that only one of two (2) car operating panels is to be modified, whereas both panels were modified in the "J" Elevators under Contract WTC 334.00.

This statement should be disregarded for the following reason: Section 4.10.12 of ANSI requires one (1) panel on one (1) front wall for center opening doors, and one (1) panel on the side wall or front wall next to the door for side opening doors. The "Facility Accessibility Guidelines" prepared by the Port Authority require that the accessible control panels "... shall be located on both front walls of center door cars and the front and adjacent wall of side door cars." As a result of this misinformation, approximately $5,000.00 was expended to perform additional work in the "J" cars that was not necessary.

The Port Authority "Facility Accessibility Guidelines" was distributed to all Port Authority staff by Mr. P. Falvey under Office Memorandum 8-81, dated July 21, 1981. Subject booklet was described as being a condensation of the ANSI Standards for use by each line Department to have existing facilities conform with accomodations for handicapped persons.

Compliance with the ANSI Guidelines will entail an expenditure of hundreds of thousands of dollars towards a very worthwhile cause; however, it is imperative that all items of misleading criteria published in the P.A. "Facility Accessibility Guidelines" booklet be corrected immediately and re-issued to all Port Authority staff.

Aaron K. Stieglitz

Aaron K. Stieglitz
Planning Architect
World Trade Center Planning

/gem

PA 90A
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WTCI-474-P
8

THE PORT AUTHORITY OF NY & NJ Memorandum

To: Aaron Stieglitz
From: Anthony Coppolecchia
Date: July 20, 1982
Subject: WTC - ENGINEERING DEPARTMENT SURVEY APRIL 1982 - HANDICAPPED FACILITIES
Reference: Memo - F. DiPaolo/A. Stieglitz, dtd 7/16/82; same subject

Copy To:

Refer To	Date	Noted By	Date
Return To		File	

As requested in the referenced memo, the following items are submitted as work to be done in 1983:

1) Handicapped drop-off at West Street.

2) Modification to West Street swing doors. Barrier on saddle to hold door presents obstacle to wheelchaired individuals using this entrance.

3) Lowering of elevator control panels on selected local, shuttle and high-rise elevators.

4) Alteration of telephones on Concourse and 44th floor skylobby to provide accessibility for both wheelchaired and hearing impaired individuals.

5) Installation of lever handled faucets - one per each bathroom.

6) Appropriate signage to identify handicapped routes.

In your response to Item #1 of the referenced memo, you are reminded that the "Facility Accessibility Guidelines" are to be used in conjunction with ANSI A117.1-80, not as a replacement of ANSI.

Anthony Coppolecchia
Sr. Administrative Assistant
World Trade Department

AC:bf

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WTC-474-P

9

THE PORT AUTHORITY OF NY & NJ Memorandum

Refer To	Date	Noted By	Date
Return To		File	

To: F. DiPaolo
From: Aaron K. Stieglitz
Date: July 20, 1982
Subject: Handicapped Accessibility at the World Trade Center Complex

Reference: 1) Memo - Montalbano/Linn, dated May 1, 1982
2) Facility Accessibility Survey for Disabled People, dated April 1982

Copy To: Messrs. A. Coppolecchia, S. Johnson, R. Linn, C. Spaulding

The following is in reply to oral directive from Mr. Linn during meeting held on July 15th:

1. During a partial review of above-referenced survey I have found that the following items listed as deficiencies are in contradiction with the actual requirements of ANSI A117.1 - 80. Whereas reference No. 1 cites ANSI A117.1 - 80 as the source for compliance, the following items are not deemed to be subjects for compliance:

a. Paper holders too high in toilets: ANSI specifies a minimum of 19", not maximum nor an exact height.

b. Mirror counters too high in Ladies Powder Rooms and lack depth - The counters are 36" above the floor and are 12" wide. These are not work counters but are for resting handbags. ANSI allows for a counter height of 48" maximum if the horizontal dimension is less than 20". Elsewhere ANSI provides for access to narrow storage shelves up to a maximum height of 54".

c. Overheight Elevator Lanterns - ANSI specifies 72" minimum, not a maximum nor an exact height requirement.

d. Elevators lack presence detectors - The elevators have detectors; however, they do not function according to latest ANSI requirements.

e. Shuttle Elevators require parallel control panels - ANSI does not discuss the subject of an elevator with two entrances - one at each end of the car; however, a choice of two operating panels is provided in each car.

f. Short Treads, no nose taper or tactile warnings, inside rail not continuous, outside rails without top and bottom extensions - These items are required only for stairs

(cont'd)

connecting floors not serviced by an elevator.

2. The following items reported as deficiencies by the surveying team are disputed:

a. Towels exceed 54" in the 25th Floor Men's and Ladies Toilets - These towels dispense at a point 39½" - 40" above the floor. However, the dispensing mechanisms at the WTC are generally 50" high.

b. Seat too high in the 25th Floor Men's Room handicapped stall - This water closet is exactly 19" to the top of the seat. However, most should be 20" to comply with requirements of ANSI 1961, which was used as basis for WTC design.

c. Mirrors exceed 40" maximum in the typical Men's Toilets - They are 12" above the floor.

d. 55th Floor Men's Room - All the deficiencies listed do not apply, as this is a second Men's Room converted by the W.T. Institure from a former Women's Toilet. The Men's Room toilet with the handicapped accessibility was apparently overlooked.

e. "Unacceptable shape" of elevator call buttons - ANSI requires that call buttons be at least 3/4 inch in their smallest dimension and does not limit their shapes. WTC call buttons are elongated triangles with two slightly curved legs. The short leg measures just a fraction less than 1/16" of the 3/4" minimum. If it is the pointed end that is deemed to be a deficiency, then a 3/4" diameter circle (acceptable by ANSI) would be unacceptable also.

f. Vesey Street Concourse ramp at No. 5 WTC lacks level landings. - The slight pitch of the landings that were provided is not deemed to be hazardous.

g. Emergency Control buttons for the "J" Elevators noted in the survey report as being 37 " high. The requirement is 35" minimum. (With regard to engraved characters being 9/16" high in lieu of 5/8", this is the result of improper engraving by Otis and possible lack of close inspections to insure that the installed work complied with requirements noted on the applicable shop drawing.)

h. 44th Floor Skylobby Restrooms are not accessible - ANSI does not require an accessible toilet on every floor but calls for " a reasonable number, but always at least one on an accessible route" in an accessible building.

3. The following requirement of ANSI 1980 is questioned: Elevator hall button fixtures shall be centered 42" above the floor. Elsewhere ANSI specifies 48" as the highest forward approach to an object, with 54" as the highest parallel approach by a person in a wheelchair- the latter of which would apply to the WTC elevator call button locations, which are mounted 48" high. Elsewhere, ANSI permits car operating panel buttons to be mounted up to 54" above the floor.

4. In the absence of direction as to priorities for corrective measures, the following are deemed by the undersigned to be of first priority:

a. Hotel corridor connection.

b. Exterior and interior signage defining accessible routes.

c. Exterior loading & unloading zones provided at all accessible entrances to buildings, including other recommendations listed under parking.

d. Modifications to two (2) Shuttle Elevators and two (2) Local Elevators in each respective group - car operating panels, gongs, door sensing devices, lighting levels in cars, floor identification numerals.

e. Corrections to deficiencies noted existing around exterior portions of WTC site - curb cuts, steps, handrails, tactile warnings, etc.

f. Installation of appropriate hardware on required doors.

g. Installation of a lever operated faucet in each accessible toilet.

Aaron K Stieglitz

Aaron K. Stieglitz
Planning Architect
WTC Planning

AKS/dlv

WTCT-474-F0

THE PORT AUTHORITY OF NY & NJ Memorandum

Refer To	Date	Noted By	Date
Return To		File	

To: Robert J. Linn
From: Aaron K. Stieglitz
Date: July 13, 1982
Subject: THE WTC - FACILITY ACCESSIBILITY SURVEY FOR DISABLED PEOPLE, dated April 1982
Reference: Memo - Linn/DiPaolo and Censullo, June 25, 1982

Copy To: Messrs. A. Coppolecchia, F. DiPaolo, J. Ritter, C. Spaulding

Above-subject report prepared by the Engineering Department has been reviewed in depth. Whereas, the report is intended to represent results of an actual audit made at specific locations described, I have found the following items to be either in contradiction with what was reported as physically examined or in contradiction with the actual requirements of ANSI A117.1 1980. The following examples are cited for your information:

1. 25TH FLOOR MEN'S ROOM

   a. "Towels exceed 54" max." - The towel mechanism as installed is 39½" above the floor.

   b. "Mirrors exceed 40" max." - The bottom of the mirror adjacent to the lavatory area is 12" above the floor, specifically added during construction to comply with earlier ANSI requirements.

   c. "Seat too high" - ANSI requires 17" - 19" height for water closets. This water closet is exactly 19" to the top of the seat. (However, most others were installed at 20" to comply with ANSI of Oct. 13, 1961.)

   d. "Paper too high" - ANSI requires a minimum height of 19", no maximum height seems to be specified.

2. 25TH FLOOR WOMEN'S ROOM

   a. "Mirror counters are too high and lack depth" - Counters are 36" above the floor and are 12" wide. These counters are not work areas but are for resting handbags. ANSI states that if horizontal dimension is less than 20" then the counter height shall be 48" maximim. Also, ANSI allows for handicapped access to storage shelves up a maximum height of 54".

PA 99A
3-80

b. "high towels" - Towel dispenser measured 40" high, well below the 54" maximum. (This is not typical, however, for zones II and III floors, which have approximately 52")

3. 55TH FLOOR MEN'S ROOM

"Restricted entry to 26", mirror too high, no accessible stall" - There are two (2) Men's rooms on this floor. The one with the handicapped accessibility was apparently not examined. The Men's room reported on is the original Women's toilet containing a handicapped stall but which was converted to a second Men's room with no need for handicapped accessibility.

4. COMMENTS ON ELEVATORS

a. "Overheight lanterns" - ANSI requires centerline of fixtures to be a minimum of 72" above the floor, not maximum.

b. "Overheight call bell" - Call buttons installed at 48" in lieu of 42". The Appendix to ANSI allows for variation in the location of the call buttons and even discusses highest control in elevator panels as 48" maximum as a desired feature to strive for. ANSI of 1961 specified 48" as the average reach.

c. "Cars lack presence detectors" - The cars have detectors; however, they do not function as required by ANSI.

d. "Shuttle Elevator requires parallel control panels" - ANSI has no requirement written up for an elevator with a door at each end of the car.

Aaron K. Stieglitz

Aaron K. Stieglitz
Planning Architect

AKS/dlv

WTCI-474-P

THE PORT AUTHORITY OF NY & NJ Memorandum

Refer To	Date	Noted By	Date
Return To		File	

To: Robert Linn
From: Dominic Montalbano
Date: May 1, 1982
Subject: FACILITY ACCESSIBILITY SURVEY - ONE WORLD TRADE CENTER

Reference: Memo, Coppolecchia to Wisner dated 10/21/81; Buck Slip, Wisner to Wander dated 10/30/81; Office Memorandum, 8-81, Office of the Executive Director

Copy To: Coppolecchia, Fasullo, Javurek, Wander, Wisner, file

The attached booklet reports the findings of a facility accessibility audit for disabled people that was conducted intermittently during the 1st quarter of 1982.

The report summarizes the approach and method by which One World Trade Center was reviewed and offers recommendations on how the other buildings of this facility might be surveyed. Each section of the report offers recommendations to improve accessibility and/or to comply with ANSI-117.1-80. These recommendations are submitted to your department to analyze and implement as necessary to conform to PA policy.

D. Montalbano

Dominick Montalbano, P.E.
Engineer of Design
Aviation/World Trade Center

JUN 10 1982

PA 90A
3-68

A-73

PA 36
9-75

THE PORT AUTHORITY OF NY & NJ

WTCI-474-P 12

To Persons Noted Below Room No.

From: Roscoe W. Wisner/Room 67W/Ext 7718

Date 4/ 5/ 82

A. Coppolecchia
C. Grundman
V.C. Kelly
J. Korek
D. Millard
B. Schroeder
S. Wander

In January, 1982, I wrote to Dr. Edward Steinfeld concerning some questions we had about ANSI's requirements for elevators. For your information, my letter and his reply are attached.

RW

Att.

bcc: L. Gambaccini, R. Javurek, K. MacKay, A. Strieglitz, J. Suda

THE PORT AUTHORITY OF NY & NJ

WTCI-474-P
One World Trade Center
New York, N.Y. 10048
(212) 466-7000
(201) 622-6500

13

January 21, 1982

Dr. Edward Steinfeld
Department of Architecture
State University of New York
Hayes Hall
Buffalo, NY 14214

Dear Dr. Steinfeld:

During the installation of some elevators here in the World Trade Center, some architectural personnel brought the following problem to my attention. Section 4.30.4 in ANSI A117.1-80 states that "indented characters or symbols shall have a stroke width of at least ¼ inch." We believe that a stroke this wide would call for letter or number height of 1¼ to 1½ inches high. We feel that it would be impractical in many instances to have numbers on the elevators this high. By designating the minimum stroke width, ANSI in affect is also requiring numbers of a particular height. We feel that strokes less than ¼ inch would be satisfactory in most instances. Do you agree? What was the reasoning behind requiring a minimum stroke width of ¼ inch?

Also, the elevator panel Detail on page 31 shows the emergency alarm, door open, main entry floor, etc. on the left side of the elevator control panel. When two elevator panels are placed on either side of the center door, we assume that the panels would be identical to each other. Is this the intent of ANSI, since the elevator industry, I understand, has a practice of reversing the panels. That is, the panel at the left of the center door would have the emergency door, door open, main entry floor, etc. on the left side of the panel, whereas the control panel to the right of the center door would have these items on the right side of the control panel.

NOT SO, JUST DOOR "OPEN" & DOOR "CLOSE" BUTTONS ARE REVERSED

Finally, the "Suggested Minimum Passenger Elevator Requirements for the Handicapped" published by the National Elevator Industry, Inc., has a bell symbol which is lined, whereas ANSI recesses the entire bell symbol. Did ANSI have a specific reason for deviating from this minimum requirement of the National Elevator Industry, Inc.?

Writer's direct dial telephone: _____

Since we have adopted ANSI as the specifications to follow in new construction, we are very interested in understanding them to the fullest extent possible. In this regard, we hope you will consider these concerns in a positive light.

Thank you in advance for responding to these concerns and I wish you and yours a very happy 1982.

Sincerely,

/Roscoe W. Wisner

Roscoe W. Wisner, Coordinator
Programs for the Handicapped

bcc: L. Gambaccini
R. Javurek
A. Stieglitz
S. Wander

THE PORT AUTHORITY OF NY & NJ

WTCI-474-P
One World Trade Center
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13

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Sincerely,

/Roscoe W. Wisner

Roscoe W. Wisner, Coordinator
Programs for the Handicapped

bcc: L. Gambaccini
R. Javurek
A. Stieglitz
S. Wander

WTCI-474-P

14

State University of New York at Buffalo

School of Architecture and Environmental Design
Department of Architecture

March 24, 1982

Mr. Roscoe W. Wisner, Coordinator
Programs for the Handicapped
The Port Authority of New York and New Jersey
One World Trade Center
New York, NY 10048

Dear Mr. Wisner:

Forgive me for being so late in responding to your January 21st letter. Somehow it got lost in the bottom of a pile and I only recently got to that level. Let me address your points in the order in which you presented them.

1. Indented Characters

There has been no research on the width that such a character must be before it can be detected easily by a finger. One quarter inch was selected in the development of the standards because it appeared safe. You were right in indicating that the one quarter inch in combination with the other criteria would result in a number height too large for elevator panels. However, a smaller stroke width might very well be totally useless in that application. It is the feeling of most of us involved in developing the standard that raised letters and numerals are much more effective in elevators because they are generally easier to read and can be smaller. Moreover, indented letters can be filled up with dirt or cleaning polish, chewing gum, or other junk such as you would find in public spaces.

2. Elevator Panels

The illustration on page 31 was not intended to specify the left-handed or right-handedness of elevator panel design. Thus, typical elevator practice would be satisfactory with regard to the standard. I feel, however, that it would make more sense to duplicate the panel exactly on either side.

3. NEII Standards (Not elevator industry standards)

The NEII guidelines were published before finalization of the ANSI Standards. In the course of negotiating the final shape of the Standards, the NEII agreed to support changes in the requirements that they had originally proposed.

302 Hayes Hall, 3435 Main Street, Buffalo, New York 14214, Telephone (716)831-3483

I hope that this has been of help.

Sincerely yours,

Edward Steinfeld
Secretary ANSI A117 Committee

mw

WTCI-474-P

15

THE PORT AUTHORITY OF NY & NJ

M E M O R A N D U M

TO: Hilliard Berry
FROM: Robert H. Lynch
DATE: September 14, 1987
SUBJECT: ELEVATOR HANDICAPPED MODIFICATIONS
COPY TO: M. Aasland, S. Burrick, T. Cancelliere, R. Linn, G. Maas, A. Stieglitz

I spoke with Mr. Donahue of the National Elevator Industry and he informed me that the international symbol of accessibility for the handicapped required by ANSI A117.1, is to be placed at a height of 60" on both door jams for each floor of the elevator services.

When Phase II of the elevator modification for the handicapped is completed, 500 signs will be necessary to meet the A117.1 requirements.

The Elevator Inspectors/Starters will start placing the signs in the appropriate places starting 9/21/87.

Robert H. Lynch
Senior Engineering Technician
World Trade & Economic Development

RHL:toy

9-18-87

HOLD THE SIGNS!

THE ANSI A117.1 CODE REQUIRES 3-DIMENSIONAL FLOOR DESIGNATION NUMERALS ON EA. JAMB - AT 60" ABOVE THE FLOOR, NOT THE INTERNATIONAL HANDICAPPED SYMBOLS.

Adam K. Stieglitz

CC: R. LYNCH, M. AASLAND, T. CANCELLIERE, S. BURRICK, R. LINN, G. MAAS, J. CARLOCK, S. JOHNSON

WTCI -474-P

16

THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY
Office Of The Executive Director

OFFICE MEMORANDUM 8-81

July 21, 1981

MEETING THE NEEDS OF PHYSICALLY DISABLED PATRONS

In the construction of public facilities, it has long been Port Authority policy to endeavor to assure maximum access and convenience to disabled persons, consistent with economic and structural requirements.

To assist departments in implementing this policy, standards developed by the American National Standards Institute (ANSI) and set forth in A117.1-80 "Specifications for making buildings and facilities accessible to, and usable by, physically handicapped people" should be incorporated in the design of projects not yet in construction. The Port Authority Manual of Design Standards for the Handicapped referred to in Office Memorandum 6-74 has been replaced by ANSI A117.1-80.

To aid each line department in developing plans, cost estimates and time schedules to bring our existing facilities in line with our efforts to accommodate disabled persons in keeping with Office Memoranda 6-74 and 3-78, a condensation of the ANSI standards has been developed by the Engineering Department and set forth in a booklet entitled "Facility Accessibility Guidelines." Copies of this booklet are being distributed to the personnel concerned with accessibility for disabled persons, and additional copies of the booklet can be obtained from the Office of Programs for the Handicapped, WTC, Room 67W.

Patrick J. Falvey
Patrick J. Falvey
General Counsel/
Assistant Executive Director

7-27
IN ORDER
~~DiPaolo~~
Johnson
Strelletz

PORT AUTHORITY OF N. Y. & N. J.
RECEIVED
JUL 24 1981
WORLD TRADE DEPARTMENT
[illegible]

THE WORLD TRADE CENTER

ACCESSIBILITY FOR THE HANDICAPPED

In the World Trade Center, provision has been made to accommodate handicapped persons in order to assure ease of access as well as comfort when visiting the Project. The following is an indication of the types of facilities which are included in the Center for handicapped people:

Access to Plaza Level

In order to reach Plaza Level from Church Street, exterior ramps (North ramp to be available 8/30/77 , South ramp under construction) are provided at Church Street (opposite Dey Street). The individual can enter the Northeast Plaza Building, the Southeast Plaza Building and the U.S. Customs Building, from this level and can take elevators to all upper floors of these buildings.

Access to Concourse Level

The Concourse Level (immediately below the Plaza) is the principal pedestrian circulation in the World Trade Center and is accessible through the Towers. Special doors for handicapped access from the Towers to the Concourse are located in the northeast corner of the One World Trade Center lobby and the northwest corner of the Two World Trade Center lobby.

The Twin Towers are accessible directly from the street - the North Tower Building from West Street and the South Tower Building from Liberty Street.

Street Access to Upper Floors of Northeast and Southeast Plaza Buildings

From Church Street, access is available to elevator service to the Southeast Plaza Building upper floors and from Vesey Street, access is available to the elevators servicing the Northeast Plaza Building upper floors.

Access to Parking

Below the Center, provision has been made for parking. To reach this parking area, automobiles travel on ramps leading from West Street. At the various parking levels, short ramps have been provided to elevators which transport workers and visitors to the Tower lobbies for transfer to the elevators servicing the Tower floors and U.S. Customs building.

Tower and Plaza Building Floors

On each floor in the tower and plaza buildings, provision has been made to install special facilities for the handicapped as follows:

- A special wide stall in one men's and one women's toilet on each floor, including a grab bar at each side, with the water closet mounted at a height suitable for handicapped people.
- Mirrors in toilets mounted lower than 40 inches from the floor.
- Paper towel dispensers and sanitary napkin dispensers and toilets accessible to people in wheelchairs.
- Framed openings to toilet areas wide enough for passage of wheelchairs.
- Elevator buttons 48 inches above floor.
- Knurled knobs on doors to dangerous areas.
- Special elevator service is available in each Tower building for handicapped people who must travel between the skylobby floors

(44 and 78) and the floors immediately above and below these skylobby floors. (Normally, accessibility to these upper and lower floors is available only via escalator.)

- Aprons of wash stands in lavatories are shallow enough to permit persons in wheelchairs to wash without excess stretching to reach water taps.

Aaron Straight 18

B U C K S L I P

TO: Mr. Joseph McNamara
FROM: Herman M. Roberts
DATE: October 12, 1977
SUBJECT: THE WORLD TRADE CENTER - Provisions for Handicapped - Report - "Meeting the Needs of Handicapped Patrons, Employees and Potential Employees" dated September 1977
COPY TO: Messrs. DiNome, Johnson, Levy

This is to confirm the following comments given to you orally on October 7:

1. To be effective, the person designated to coordinate the Port Authority's efforts in meeting the needs of the handicapped should have a background in functional planning, design and construction of the facility under consideration as well as administration and coordination abilities.

2. The report includes a general statement that the World Trade Department has made significant compromises in applying design standards for the handicapped to expedite the project. A general statement of this nature should be challenged since specifics are not indicated. In fact, the Department was using the American National Standards Institute "Accessibility Standards" as design criteria as far back as 1964. Furthermore, this Department had been in direct communication during that time with the New York State University Construction Fund.

H.M.R.

AS/sw

WTCI-474-P 19

MEMORANDUM

PA 90-A
5-63

REFER		NOTED	
TO	DATE	BY	DATE
RETURN TO		FILE	

TO: Richard Ehmann
FROM: Herman M. Roberts
DATE: February 22, 1974
SUBJECT: THE WORLD TRADE CENTER - PROVISIONS FOR THE HANDICAPPED

REFERENCE: S. Wenegrat to Ehmann dated 12/3/74 (memo)

COPY TO: Messrs: D. Censullo, S. Johnson, M. P. Levy, A. Stieglitz

In response to Mr. Wenegrat's memorandum referenced above, we have reviewed the results of his survey concerning services provided for the handicapped at the World Trade Center and comment as follows:

Classification: Handicapped in Wheelchairs

Item	
Inclined Elevators -	Not Applicable - handled with ramps and special elevators.
Ramps (Exterior & Interior) -	Provided on North, South & West sides.
Showers -	Not Applicable.
Display Access for Handicapped Symbol -	We will investigate.
Toilet Urinals -	Special water closets are provided, serving the same need.
Water Fountains -	Not Applicable - Fountains are in tenant areas.

Classification: Blind

Item	
Hazards Protection -	Knurled knobs provided at telephone and electrical closets, sub-stations, pump rooms, elevator pits, etc.

Classification: Blind - cont'd

Item	
Pavement Textured to warn of obstacles -	Not Applicable.
Visual Fire Alarms Signals and Paging Devices -	We are studying the feasibility of blikning the lights on and off in tenant space when a fire alarm is received at the Central Desk.

Please convey this information to Mr. Wencgrat and add whatever items you deem appropriate.

In addition, we advised Mr. Carroll of the Chief Architects office that we had no comments to offer on the Design Standards for the Handicapped booklet previously sent to us for review. He was so advised via buckslip on February 15, 1974.

for Herman M. Roberts
Manager, World Trade Planning
World Trade Center Planning

DC/gp

WTCI-474-P

20

MEMORANDUM

REFER TO	DATE	NOTED BY	DATE
RETURN TO		FILE	

O: Sidney A. Schachter, Manager, WTC Lease Control
ROM: Herman M. Roberts
ATE: July 25, 1967
UBJECT: THE WORLD TRADE CENTER - NEW YORK STATE - ADDENDUM TO SCHEDULE A - PROVISIONS FOR THE HANDICAPPED
EFERENCE: Memorandum S. Schachter to M. Levy and D. Mills dated 7/13/67
OPY TO: Messrs. McAvey, Mills, Levy, Simmons, Solomon (ERS), Tessler, Tozzoli, VanderVliet

We have reviewed your addendum to Schedule A - Provisions for the Handicapped dated July 13, 1967. At this time we feel it is premature to include this as a part of Schedule A. Many items are still under design.

It is our objective to provide facilities for the handicapped. Our normal contract review will check for handicap standards previously forwarded to our consultants. As you can recognize there will be things we will not be able to accommodate due to physical limitations, therefore we recommend that this addendum be deferred until more detailed information is available.

The following are our comments on those elements listed in the addendum as they relate to the plans in their present state.

Toilets:

One toilet for each sex will be accessible to the physically handicapped. This facility will have sufficient space to allow wheelchair traffic. The stall shall be at least 3' wide, by 5'-0" deep. The door will be 32" wide and swing out. Handrails 32" high on each side 1-½" O.D. with 1-½" clearances between the wall and rail securely fastened at ends and center. Water closet will be wall mounted with the seat 20" from the floor. (It should be noted that toilets are not being provided on the ballcony.)

Lavatory is a standard fixture set 2'-8" off the floor with a 3 3/8" rim. Hot water pipes and drains are not insulated.

Mirror over lavatory is presently located 48" above the floor. A full length mirror is provided in the women's lounge.

Towel dispensers and disposal units are a combination fixture 5'7" high (set 6" above the floor). The towel section is approximately 40" above the floor.

P4.90-C
5-53

Telephones:

Public telephones to meet the needs of the handicapped are provided by the New York Telephone Company.

Herman M. Roberts
Manager - Tenant Planning
W.T.C.-Plng. & Constr. Div.

CJS:mb

EMERY ROTH & SONS
ARCHITECTS • 850 THIRD AVENUE, NEW YORK, N.Y. 10022 • PLAZA 3-1733

RICHARD ROTH, SR., A.I.A.
IRVING C. GERSHON, A.I.A.
HARRY J. HARMAN, A.I.A.
RICHARD ROTH, JR., A.I.A.

JULIAN ROTH
ADMINISTRATION
ESTELLE DEAL
CONTROLLER

July 27, 1966

THE PORT OF NEW YORK AUTHORITY
RECEIVED
JUL 29 1966
WORLD TRADE DEPARTMENT
WORLD TRADE CENTER
PLANNING DIVISION

Mr. Herbert A. Tessler
Supervisor, Functional Coordination
World Trade Center
The Port of New York Authority
111 Eighth Avenue
New York, New York 10011

Re: World Trade Center
Provisions for
the Handicapped

Dear Herb:

We have summarized the requirements for handicapped persons contained in the brochure by the American Standards Association that you sent to us. A copy of this memorandum is enclosed.

In accordance with your prior instructions in this matter, we have provided one extra-size toilet stall with handrails for use by the handicapped of each sex per floor. Please inform us if you require that we adhere to the additional requirements in regard to urinals, mirrors and lavatories that are specified for toilets.

We understand that the criteria for stairs pertains to monumental or public stairs and will not affect the typical fire stairs. We shall continue to detail these stairs with standard risers and typical square nosings.

We anticipate that only doors from public areas to facilities such as boiler rooms, refrigeration rooms, mechanical equipment rooms and other such areas containing moving equipment will have knurled knobs for identification by the blind. Electric and telephone closets will normally be locked and therefore will not require special identification. Stair doors are not considered dangerous for normal use and will also not be provided with special door knobs.

The ramps and public walks for access to the building from the street will be designed as required as soon as their location is determined by MYA.

Please let us know as soon as possible if this does not meet with your understanding.

Cordially,

EMERY ROTH & SONS

By

JOSEPH H. SOLOMON

JHS:mlk

ASSOCIATES: VICTOR GORLACH • FRED HALDEN • OSTAL KENT, A.I.A. • BERNARD KESSLER, A.I.A. • PHILIP MARTINES
... SOLOMON, A.I.A. ...

WTCI-474-8
12

July 25, 1966

MEMORANDUM

Provisions for the Handicapped
at the World Trade Center

Main Requirements:

Ramps from street level to building entrance.

Door openings at least 32" clear width.

One toilet for each sex accessible to the physically disabled.

Wheel Chair Specifications:

Turning radius, fron to back,: 31.5" Average turning space required for 180° to 360° turn; 60" x 60" (note: 63" x 56" is better).

Public Walks:

Minimum 48" wide
Maximum Gradient - 5%

Where walks cross they should blend to a common level.

Level platforms required at top of walks; 5'x 5' minimum if doors swing onto platforms, 3' x 5' minimum if door swings away. Platforms should extend 1 ft. on each side of door.

Parking spaces for disabled use should either have clear space open on one side or, if conventional stall type, shall be 12 ft. wide.

Ramps:

Maximum slope 8% (1ft. rise in 12 ft.) Handrails required on one side and preferred on both sides. Shall be smooth finish, 32" above surface of ramp and shall extend 1 ft. beyond top and bottom of ramp. Surface of ramp shall be non-slip. Platforms at doors on top and bottom of ramp same as requirement for Public Walks. Straight clearance of 6ft. required at bottom of ramp. Level platforms required every 30 ft. and wherever ramp turns. At least one primary entrance shall be usable by wheelchairs. Minimum clear width of 32" at door opening with door open.

Stairs:

Stairs that might be required for use by semi-ambulatory individuals shall not have square nosings. Nosings shall be round edge with sloped risers of 1-1/2" maximum slope. Stair handrails shall be 32" high and extend 18" beyond top and bottom step. Where possible, rise: shall not exceed 7".

Floors:

Shall be non-slip and of a common level throughout unless connected by approved ramps.

Toilets:

Shall have sufficient space to allow wheelchair traffic. At least one stall shall be 3 ft. wide by 4'-8" deep (5' depth preferred). Door shall be 32" wide and swing out. Handrails 33" high on each side 1-1/2" O.D. with 1-1/2" clearance between wall and rail and securely fastened at ends and center.

Water closet seat 20" from floor. Wall mounted W.C. preferred with narrow understructure that recedes sharply.

Lavatory shall have narrow apron to permit access by wheelchair when lavatory is standard height otherwise it should be mounted higher than standard. Hot water pipes and drains shall be insulated.

Mirrow over lavatory shall be no higher than 40" above floor.

One urinal shall be floor mounted or, if wall mounted, opening in basin shall be 19" above floor.

Towel racks, dispensers and disposal units shall be no higher than 40" above floor.

Water Coolers:

Shall be hand or hand-and-foot operated. Wall mounted preferred with basin 36" above floor. Floor mounted models shall have additional fountain 30" above floor. Fully recessed types are not recommended.

Public Telephones:

Should be made usable by the physically disabled. Dials and handsets shall be placed so that they can be reached by persons in wheelchairs and some should be equipped for use by persons with hearing difficulties.

Switches and Controls: for light, heat ventilation fire alarms and similar controls of frequent and essential use shall be accessible to persons in wheelchairs.

Doors: That are not intended for normal use and that might prove dangerous if used by a blind person should be made quickly identifiable to the touch by using knurled door knobs or handles.

Rooms or offices should be identified by raised numbers or letters.

Hazards shall be identified by both visual and audible signals.

BY_____
JOSEPH H. SOLOMON

JHS:mlk

WTCI-474-P 23

July 12, 1966

Mr. Aaron Sobrelow
Minoru Yamasaki & Associates
1013 East Maple Road
Birmingham, Michigan

Dear Aaron,

The following is in answer to your questions of my June 16,1966 letter regarding provisions in The World Trade Center for the physical handicapped.

Enclosed is a copy of the "American Standard Specifications" for making a building accessible and usable by the physical handicapped.

You can assume that the majority of physical handicapped will arrive via taxi or automobile thereby eliminating the need for providing special curb cuts along the WTC peripheral streets and islands.

I would like to stress the requirements for having ramps, with a maximum grade of 8%, between the Vesey, West and Liberty Street sidewalks and the lobby of the North and South towers (elev. 310) as well as all other WTC concourse entrances. A method of providing access for wheel chairs to the Plaza will also be required.

As additional information becomes available it will be forwarded to you.

Sincerely,

Herbert A. Tessler

cc: J. Solomon (HRH), M. Yamasaki (MYA)
att. WJATT.

bcc: M. Levy, D. Mills, M. Roberts, R. Sullivan

HLtdd

WTCI-479-P

LFM 6/24

THE PORT OF NEW YORK AUTHORITY

111 Eighth Avenue at 15th Street New York NY 10011

620-0235

WORLD TRADE CENTER

Malcolm P. Levy
CHIEF, PLANNING DIVISION

Richard C. Sullivan
DIRECTOR

June 16, 1966

THE PORT OF NEW YORK AUTHORITY
RECEIVED
JUN 22 '66
WORLD TRADE DEPARTMENT
WORLD TRADE CENTER
PLANNING DIVISION

Mr. Aaron Schreier
Minoru Yamasaki & Associates
1025 East Maple Road
Birmingham, Michigan

Dear Aaron,

The design of the Project should include provisions for the handicapped. Ramps for wheelchair cases must be provided at Towers A and B Lobbies to the 310 level and from Church Street level to the Plaza level from Church Street.

Sincerely,

Herbert A. Tessler
Supervisor, Functional Coordination

cc: Joseph Solomon (ER&S)

AARON SCHREIER

JUN 21 1966

See letter HAT to Schreier: July 12, 1966

for info

write Aaron

1) they will arrive by taxi or car

2) curb cuts not needed

3) Ramps to Bldg lobbies needed (concourse will do)

4) there must also be method of getting to plaza (elevator)

8) MAX.

Herb: Please let me know the results of your meeting with the people from the [illegible] group.

② Do you feel that it will be necessary to provide curb cuts at the main site perimeter, or [illegible] that the curbs [illegible] streets; or will it be [illegible] taxis will be [illegible] at main [illegible].

WICI-474-P
File 25

To: Herbert A. Tessler, Supervisor -- Planning Division

From: E. S. Gallik

Date: April 23, 1964

After reviewing the standards for the handicapped, there appears to be no serious problems that we would encounter in meeting all of their requirements.

There is, however, one area (at Stage "A") that will require further study -- providing a ramp, with a maximum slope of 5%, for wheel chairs at the Greenwich Street entrance steps. No other area where steps are employed, whether at Stage "A" or the complete project configuration, does the introduction of a ramp to an upper or lower level create any problems that cannot be easily resolved.

The factors which we have to bring under consideration and study to resolve handicap requirements in the preliminary and final contract documents and specifications are basically:

1. Ramps

2. Doors

3. Stairs

4. Handrails

5. Floor Finishes

6. Toilets (accessories)

7. Water Coolers

8. Public Telephones

9. Elevators (accessibility at all entrance and general public use levels)

10. Controls (i.e. -- light switches, heat, draperies, fire alarms, etc.)

11. Identification (facilities used by the public - toilets, offices, floor humerals, etc. -- which can be readily identified by the blind (raised letters)).

The publication issued by the American Standards Association clearly enumerates the considerations for each of the above mentioned factors.

E. S. Gallik

ESG:rt